

# Process of controlled radical (co)polymerisation of (meth)acryl or vinyl monomers in the presence of Fe, Ru or Os complexes and so prepared (co)polymers

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## Abstract of EP0826698

A method for controlled radical (co)polymerisation of (meth)acrylic and/or vinyl monomers comprises (co)polymerisation in mass, solution, emulsion, or suspension at a temperature which can go as low as 0 degrees C. The method is carried out in the presence of a primer comprising at least one radical generator; and at least one catalyst consisting of metal complex of formula  $MAa(L)_n$  (I), where M = Fe, Ru, or Os; A = halogen or pseudo-halogen; L = (chiral) ligand, selected from  $PRR'R''$ ,  $P(OR)(OR')(OR'')$ ,  $NRR'R''$ ,  $ORR'$ ,  $SRR'$ ,  $SeRR'$ ,  $AsRR'R''$ , and  $SbRR'R''$ ; R, R', R'' = 1-14C (substituted) alkyl or (substituted) aromatic, at least two ligands being linked by one or more bivalent radicals; a = 1-3; and n = 1-3. The method also requires the absence of activators; systems such as 1-phenyethylchloride/RuCl<sub>2</sub> - PPh<sub>3</sub>, and benzyl chloride/FeCl<sub>2</sub> - (Et)<sub>3</sub>P being excluded in the polymerisation of styrene.

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